In the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

1   1.   (Currently Amended) A data transfer controller comprising:
2   a request queue controller capable of receiving, prioritizing
3   and dispatching data transfer requests each specifying a data
4   source, a data destination and a data quantity to be transferred;
5   a data transfer hub connected to the request queue controller
6   for receiving dispatched data transfer requests;
7   a plurality of _data_ ports having an interior interface
8   connected to the data transfer hub which is so configured as to be
9   the same for each _data_ port and an exterior interface configured
10 for an external memory/device which, in operation, is connected to
11 said _data_ port, the interior interface and the exterior interface
12 being connected for data transfer therebetween;
13 at least one transfer requestor node connected to said request
14 queue controller and capable of supplying a data transfer request
15 to said request queue controller;
16 wherein the data transfer hub being capable of controlling
17 data transfers from a source _data_ port corresponding to the data
18 source to a destination _data_ port corresponding to the data
19 destination in quantities corresponding to the data quantities to
20 be transferred under a currently executing data transfer request;
21 and
22 wherein at least one of said plurality of _data_ ports consists
23 of an active data port connected to said request queue controller
24 capable of supplying a data transfer request to said request queue
25 controller specifying a data source, a data destination and a data
26 quantity to be transferred.

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1   2.   (Original) The data transfer controller of claim 1,
2 wherein:

3   said active data port capable of generating a data transfer
4 request specifying said active data port as said data destination;
5   wherein said data transfer hub generates a read command to
6 said data source and transfers read data to said active data port.

1   3.   (Currently Amended) The data transfer controller of claim
2 2, wherein:

3   said data transfer hub generates a pre-write command to said
4 active data port prior to transferring said read data to said
5 active data port; and

6   said active data port generates an acknowledge signal to said
7 data transfer hub following receipt of said pre-write command when
8 said active data port is ready to receive data.

1   4.   (Original) The data transfer controller of claim 1,
2 wherein:

3   said active data port capable of generating a data transfer
4 request specifying said active data port as said data source;
5   wherein said data transfer hub generates a read command to
6 said active data port and transfers read data to said data
7 destination.

1   5.   (Original) The data transfer controller of claim 4,
2 wherein:

3   said interior interface of said active data port supplies a
4 read data command to said exterior interface of said active data
5 port in response to read data command of said data transfer hub.

1   6.   (Original) The data transfer controller of claim 4,
2 wherein:

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3   said interior interface of said active data port includes a
4 first-in-first-out buffer;

5   said exterior interface writing data into said first-in-first-
6 out buffer upon generation of said data transfer request by said
7 active data port; and

8   said interior interface supplying data read from said first-
9 in-first-out buffer upon receipt of said read command from said
10 data transfer hub.

1   7. (Currently Amended) The data transfer controller of claim
2 6, wherein:

3   said interior interface of said active data port generates a
4 stall signal to said exterior interface of said active data port
5 when said first-in-first-out buffer is full; and

6   said exterior interface refrains from writing data into said
7 first-in-first-out buffer upon receipt of said stall signal.

1   8. (Currently Amended) A method of data transfer comprising
2 the steps of:

3   generating via at least one transfer requestor node data
4 transfer requests each specifying a data source, a data destination
5 and a data quantity to be transferred;

6   receiving, prioritizing and dispatching data transfer
7 requests;

8   transferring data from a source data port selected from a
9 plurality of data ports corresponding to the data source specified
10 in a data transfer request to a destination data port selected from
11 said plurality of data ports corresponding to the data destination
12 specified in the data transfer request in quantities corresponding
13 to the data quantities to be transferred specified in the data
14 transfer request under a currently executing data transfer request;

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15   wherein at least one of said plurality of <u>data</u> ports is an
16 active data port; and

17   generating a data transfer request at an active data port
18 specifying a data source, a data destination and a data quantity to
19 be transferred.

1   9.   (Previously Presented) The method of data transfer of
2 claim 8, wherein:

3   generating a data transfer request at an active data port
4 specifying said active data port as said data destination.

1   10. (Currently Amended) The method data transfer of claim 9,
2 further comprising the steps of:

3   supplying a pre-write command to said active data port prior
4 to transferring said read data to said active <u>data</u> port; and

5   supplying an acknowledge signal from said active data port
6 following receipt of said pre-write command when said active data
7 port is ready to receive data.

1   11.   (Previously Presented) The method of data transfer of
2 claim 8, wherein:

3   generating a data transfer request at an active data port
4 specifying said active data port as said data source.

1   12.   (Original) The method of data transfer of claim 11,
2 further comprising the steps of:

3   writing data into a first-in-first-out buffer upon generation
4 of said data transfer request by said active data port; and

5   supplying data read from said first-in-first-out buffer upon
6 receipt of a read command by from said active data port.

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1   13.   (Original) The method of data transfer of claim 12,
2 further comprising the steps of:
3   generating a stall signal when said first-in-first-out buffer
4 is full; and
5   refraining from writing data into said first-in-first-out
6 buffer upon generation of said stall signal.

1   14.   (Previously Presented) The data transfer controller of
2 claim 1, further comprising:
3   a plurality of transfer request nodes disposed in a chain
4 having an upstream most node and a downstream most node, said
5 downstream node connected to said request queue controller;
6   a plurality of transfer requestor nodes each capable of
7 generating service requests and each connected to a corresponding
8 one of said plurality of transfer request nodes; and
9   a special transfer request node connected to said upstream
10 most node of said plurality of transfer request nodes and said
11 active data port, said special transfer request node connecting
12 said active data port to said request queue controller via said
13 plurality of transfer request nodes.

1   15.   (Previously Presented) The method of data transfer of
2 claim 8, wherein:
3   said step of receiving, prioritizing and dispatching data
4 transfer requests is performed by a request queue controller;
5   further comprising the steps of:
6   transferring data transfer requests from each of a plurality
7 of transfer requestor nodes to said request queue controller via a
8 chain of a plurality of transfer request nodes having an upstream
9 most node and a downstream most node, said downstream node
10 connected to said request queue controller; and

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11   transferring data transfer requests from said active data port
12 to said request queue controller via a special transfer request
13 node connected to said upstream most transfer request node.